

Design Details:

Printed Circuit Board Creation

In order to make the Beer Bouncer as compact and neatly laid out as possible it was necessary to make printed circuit boards. There are three circuit boards in the Beer Bouncer. The first is the master board which controls the keypad, key switch for normal and party mode, LCD display, and sends signals to the motor circuit. The second is the keg-o-meter circuit which controls the keg-o-meters. Both of these are located in the main circuit box. The final circuit is located in the valve box and controls the motor that opens and closes the valves. All of these boards were created the same way using a positive photo resist technique. See the appendix for the PCB Express circuit schematics which are drawn to scale. The process is conducted as follows.

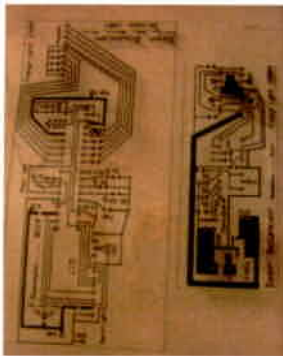


Figure 1. Create circuit on PCB Express and print onto transparency sheets



Figure 2. Expose Circuit for 4 minutes



Figure 3. Develop circuit for approx. 1 minute



Figure 4. Etch board for approx. 15 minutes



Figure 5. Drill holes for mounting components



Figure 6. Use steel wool to expose the copper traces

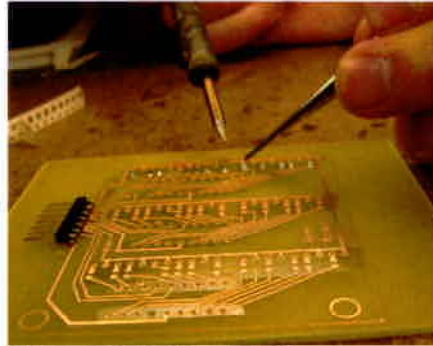


Figure 7. Solder surface mount resistors and capacitors to boards along with any other components

The following pictures show the three finished circuit boards and how the project components are connected together via the boards.

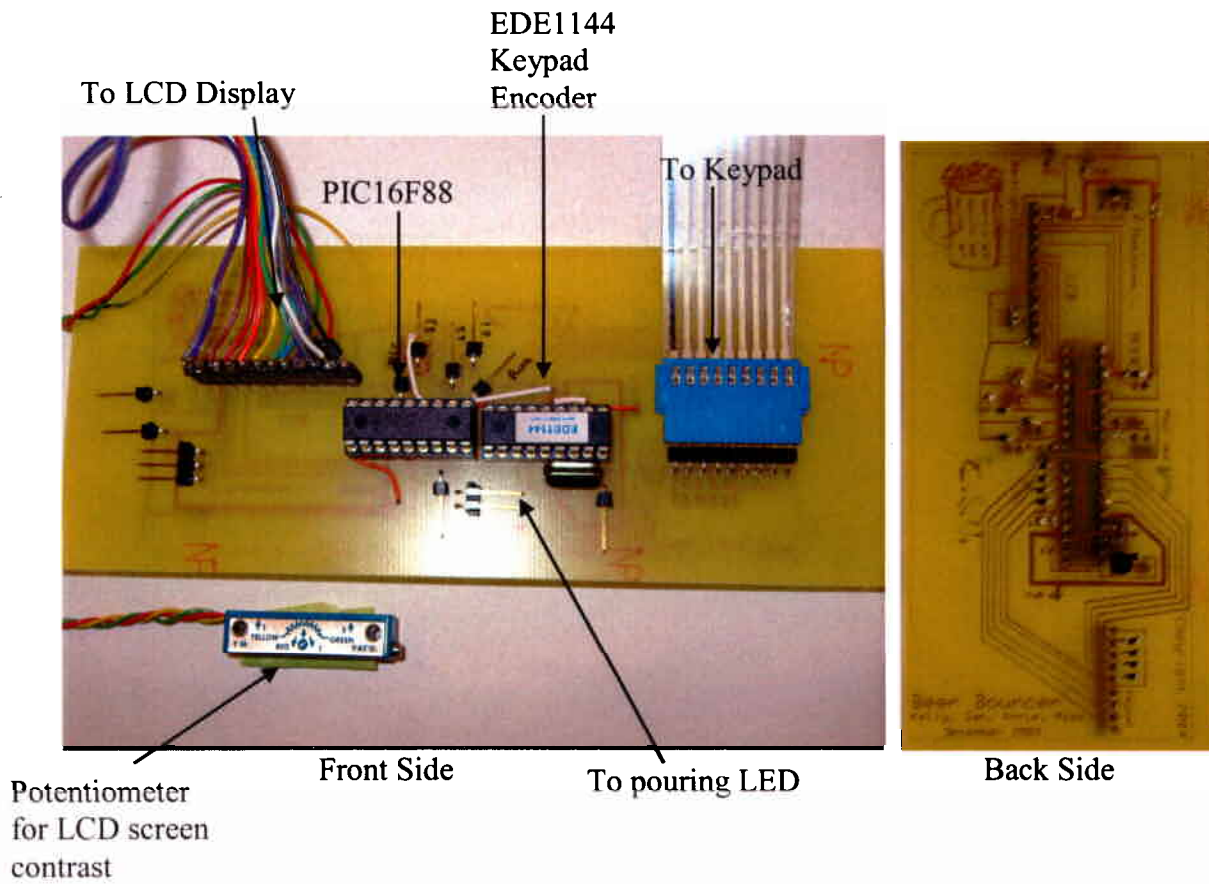


Figure 8: Master Circuit Board

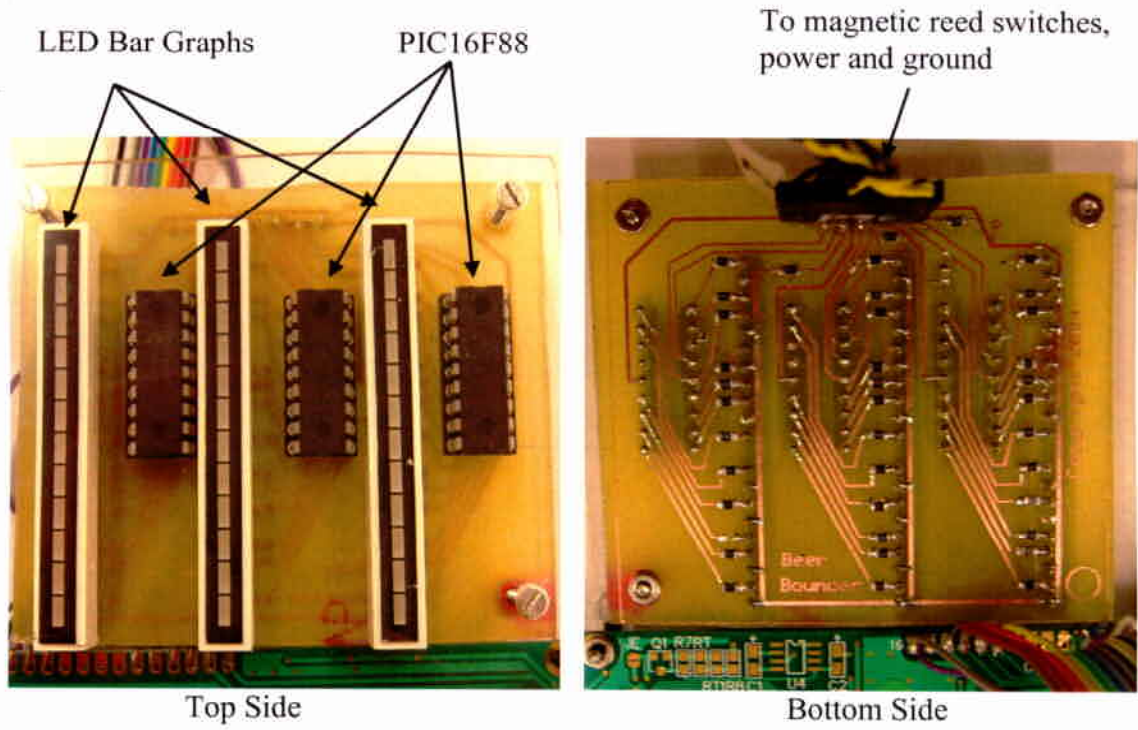


Figure 9: Keg-o-meter Circuit Board

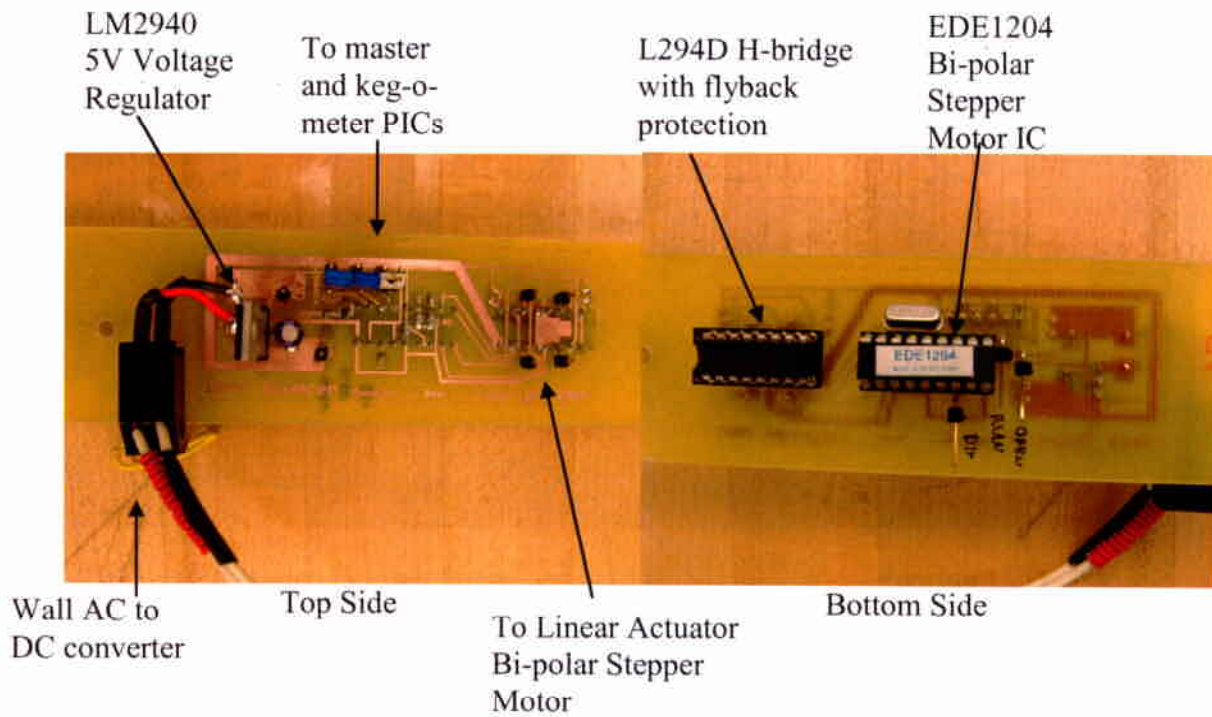


Figure 10. Motor Circuit Board

